02-09-04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert Todd Belt		
Title:	Actuated Deformable Membrane Mirror		
Serial No.:	10/734,699	Filing Date:	Dec. 12, 2003
Examiner:	Not assigned yet	Group Art Unit:	Not assigned yet
Docket No.:	RTB001US		

San Jose, California
February 6, 2004

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT UNDER CFR § 1.97(b)

Dear Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, Applicants call to the attention of the Examiner the documents listed on the attached substitute PTO Form-1449A.

Copies of the listed documents are enclosed.

Citation of the above documents shall not be construed as:

1. an admission that the documents are necessarily prior art with respect to the instant invention;

2. a representation that a search has been made; or

3. an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

No fee is believed required for submission of this information disclosure statement. However, the Commissioner is hereby authorized to charge any fees that may be required for consideration of this information disclosure statement to Deposit Account No. 50-1767.

EXPRESS MAIL LABEL NO.

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Respectfully submitted,

David Millers
Attorney for Applicants
Reg. No. 37,396

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 3

Complete if Known	
Application Number	10/734,699
Filing Date	Dec. 12, 2003
First Named Inventor	Robert Todd Belt
Group Art Unit	
Examiner Name	
Attorney Docket Number	RTB001US

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	U.S. Patent Document Number	Kind Code[2] (*if known*)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	5,589,725		Haertling	12-31-1996	ALL
	2	6,108,121		Mansell et al.	08-22-2000	ALL
	3	6,247,908	B1	Shinohara et al.	06-19-2001	ALL
	4	6,359,374	B1	Dausch et al.	03-19-2002	ALL
	5	6,384,952	B1	Clark et al.	05-07-2002	ALL
	6	2001/0043027	A1	Hellbaum et al.	11-22-2001	ALL
	7	2002/0041131	A1	Takeuchi et al.	04-11-2002	ALL

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Office[3]	Number[4]	Kind Code[5] (*if known*)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T_6

Examiner Signature		Date Considered	

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[1] Unique citation designation number. [2] See attached Kinds of U.S. Patent Documents. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark hee if English language Translation is attached.

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Sheet 2 of 3

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Attorney Docket Number	RTB001US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	8	Bifano, Thomas G. et al., "Continuous-membrane Surface-micromachined Silicon Deformable Mirror" *Optical Engineering* 36:5 (May 1997) p. 1354-1360.	
	9	Ealey, Mark A. et al., "Continuous Facesheet Low Voltage Deformable Mirrors" *Optical Engineering* 29:10 (October 1990) p. 1191.-1198.	
	10	Hulburd, Bill et al., "Segmented Mirrors for Atmospheric Compensation" *Optical Engineering* 29:10 (October 1990) p. 1186-1190.	
	11	Lim, C.W. et al., "Three-dimensional Electromechanical Responses of a Parallel Piezoelectric Bimorph" *International Journal of Solids and Structures*, Vol. 38 (2001) p. 2833-2849.	
	12	Mali, Raji Krishnamoorthy et al., "Development of Microelectromechanical Deformable Mirrors For Phase Modulation of Light" *Optical Engineering* 36:2 (February 1997) p. 542-548.	
	13	Morris, Christopher J. et al., "Optimization of a Circular Piezoelectric Bimorph for a Micropump Driver" *Journal of Micromechanical Microengineering*, Vol. 10, (2000) p. 459-465.	
	14	Hoffmann et al., "Fabrication and Characterization of a PZT Thin Film Actuator for a Micro Electromechanical Switch Application" *Materials Research Society Symposium Proceedings* Vol. 688, C5.9 (2002) p. 145-152.	
	15	Roggemann, Michael C. et al., "Use of Micro-electro-mechanical Deformable Mirrors to Control Aberrations in Optical Systems: Theoretical and Experimental Results" *Optical Engineering* 36:5 (May 1997) p. 1326-1338.	
	16	Shwartz, Josef et al., "Tactical High Energy Laser" SPIE Proceedings on Laser and Beam Control Technologies" Vol. 4632 (January 21, 2002).	
	17	Vdovin, Gleb et al., "Technology and Applications of Micromachined Silicon Adaptive Mirrors" Optical Engineering 36:5 (May 1997) p. 1382-1390.	
	18	Winsor, R. et al., "Finite Element Analysis of Low Cost Membrane Deformable Mirrors for High Order Adaptive Optics" Proceedings of SPIE – High Resolution Wavefront Control: Methods, Devices and Applications, Denver, Colorado (July 19-20, 1999) p. 2-11.	

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T [2]
	19	Winsor, R. et al., "Low Cost Membrane Type Deformable Mirror With High Density Actuator Spacing" Proceedings of SPIE – Adaptive Optical Systems and Technology, Munich, Germany (March 29-31, 2000) p. 563-572.	
	20	Yang, Eui-Hyeok (EH) et al., "Design and Fabrication of Electrostatic Actuators With Corrugated Membranes for MEMS Deformable Mirror in Space" Proceedings of SPIE – Imaging Technology and Telescopes, San Diego, California, Vol. 4091 (July 30-31, 2000) p. 83-89.	

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